

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY



(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference H 2903 PCT	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/EP2005/002151	International filing date (day/month/year) 01.03.2005	Priority date (day/month/year) 01.03.2004
International Patent Classification (IPC) or national classification and IPC INV. A61C9/00 A61C5/06 B05C17/01		
Applicant 3M ESPE AG ET AL.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand 16.12.2005	Date of completion of this report 12.06.2006	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer Chabus, H Telephone No. +31 70 340-2684 	

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2005/002151

Box No. I Basis of the report

1. With regard to the **language**, this report is based on

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-10 as originally filed

Claims, Numbers

1-17 as originally filed

Drawings, Sheets

1/1 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2005/002151

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-12, 14-16
	No: Claims	13, 17
Inventive step (IS)	Yes: Claims	
	No: Claims	1-17
Industrial applicability (IA)	Yes: Claims	1-17
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V.

1. Reference is made to the following documents:

- D1 : US 5 853 774 A (DREVE VOLKER) 29 December 1998 (1998-12-29)
- D2 : US 6 575 331 B1 (GUEST BRIAN W ET AL) 10 June 2003 (2003-06-10)
- D3: US 2003/022128 A1 (HEYMANN RUDOLF ET AL) 30 January 2003 (2003-01-30)
- D4: US-A-5 630 527 (LEUSCHNER MICHAEL J ET AL) 20 May 1997 (1997-05-20)

2. INDEPENDENT CLAIM 1

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not inventive in the sense of Article 33(3) PCT.

Document D2 discloses an apparatus for generating a multi-component compound comprising:

- at least two cartridges (88a, 88b), each cartridge adapted for containing a component of the multi-component compound and having a plunger adapted for pressing out its component from the cartridge (see column 7 line 56 to column 8 line 7 and figure 5);
- a driving device (22, 82a, 82b, 92a, 92b) for said plungers in which the driving speed is adjustable (implicitly disclosed), wherein the driving device comprises a stepping motor (see column 1 lines 12-17), and a detector associated with the stepping motor (see column 6 lines 62 to column 7 line 2).

The subject-matter of claim 1 differs from the apparatus known from D2 in that the detector detects at least one of

- a) the steps of the stepping motor and,
- b) the load on the stepping motor.

The problem to be solved by the present invention may therefore be regarded as delivering an accurate volume of a multi-component compound.

The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

Document D2 solves the problem of delivering an accurate volume of compound. The device disclosed in D2 is connected to a controller (22), which may be a computer and which comprises feedback means which send feedback from the actuator (12) to the controller (22) in particular for controlling the force applied by the driving mechanism (see column 6 line 62 to column 7 line 2). Moreover, in D2 the actuator may be a stepping motor (see column 5 lines 12-17).

In order to achieve the above mentioned effect and to solve the identified problem, the person skilled in the art would regard as a normal option to detect the steps of the stepping motor and the load on the stepping motor.

Consequently, the subject-matter of claim 1 does not involve an inventive step.

3. INDEPENDENT CLAIMS 13, 17

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 13 and 17 is not new in the sense of Article 33(2) PCT.

- 3.1 Document D2 discloses a method (see column 4 lines 36-40) of generating a multi-component compound by pressing out and mixing its components from at least two cartridges (88a, 88b) by driving plungers inside the cartridges (see column 7 line 56 to column 8 line 7 and figure 5) by means of a driving device in which the driving speed is adjustable (implicitly disclosed), wherein a stepping motor for driving the plunger is provided (see column 5 lines 12-17).

Therefore, the subject-matter of claim 13 is not new.

- 3.2 Document D2 also discloses the use of a method as mentioned in claim 13 for generating, dispensing and mixing multi-component compound products. Consequently, the subject-matter of claim 17 is not new.

4. DEPENDENT CLAIMS 2-12, 14-16

Dependent claims 2-12, 14-16 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

4.1 Document D1 discloses a driving device adapted to drive a motor at different predetermined constant speeds (**claims 4, 5**) (see column 2 lines 24-27). Moreover, the apparatus disclosed in D1 is used for the formation of otoplastics which needs a highly calm and controlled supply of a very viscous material (see column 2 lines 21-22 and 27-28). Document D1 implicitly discloses a motor which is able to drive the plungers at low speed with high torque and at higher speed (**claim 7**).

In D1, the output shaft of the stepping motor is connected via a steel band (considered as a belt) to each device for moving the plunger (**claim 8**) (see column 2 lines 31-37).

The apparatus disclosed in D1 comprises a driving device adapted to monitor the position of the plunger (**claim 9**) by means of a limit switch 44 which detects and monitor an empty position of a plunger (**claim 11**) (see column 3 lines 19-25). Furthermore, the apparatus disclosed in document D1 includes a mixer (40) (**claim 16**) (see column 4 lines 33-34).

The person skilled in the art would combine obviously the features of document D1 and D2 and arrive at the subject-matter of **claims 4, 5, 7-9, 11 and 16**. Consequently, the subject-matter of these claim does not involve an inventive step.

4.2 Document D3 discloses a method and device for generating a multi-component compound, in particular for dental purposes (see paragraph [0001]) in which the regulation of the advance speed is effected as a function of the pressing-out behaviour of the components, which behaviour is compared with stored or calculated values from known materials (see paragraph [0009]). In view of the teaching of document D3, it appears that the combination of the features mentioned in **claims 2, 3, 5, 6, 12, 14 and 15** in an apparatus as disclosed in D1 does not involve an inventive step.

4.3 Document D4 discloses a fluid dispenser system used in particular in dentistry (see column 1 lines 7-11) comprising a stepper motor and a driving device adapted to monitor the position of the plunger by monitoring the driving steps of the stepping motor (**claim 10**) (see column 2 lines 7-10). The combination of this feature with the features of the apparatus disclosed in D1 does not involve an inventive step.